

region in contact with the at least one LDD region,

wherein the pixel TFT comprises a channel forming region, at least one LDD region in contact with the channel forming region, and a source region and a drain region in contact with the at least one LDD region,

wherein the pixel electrode and the source wiring are formed, simultaneously.

### REMARKS

#### Status, Period for Filing Amendment and Conditional Petition For An Extension of Time

On May 8, 2002, the Examiner issued a final rejection. On September 9, 2002, Applicants filed Amendment B (After Final) with a one month extension of time. On September 26, 2002, the Examiner issued an Advisory Action stating that he had considered the request for reconsideration but deemed it not to place the application in a condition for allowance.

Applicants filed a Notice of Appeal on October 8, 2002 with a two month extension of time.

The two month period for filing the Appeal brief was December 8, 2002. As this fell on a Sunday, the next business day is December 9, 2002. Applicants have instead opted to file a RCE with this Amendment and an IDS. Accordingly, it is not believed that an extension of time is needed. If such an extension of time is necessary, please consider this a conditional petition for the necessary extension of time and please charge our deposit account 50/1039 for any fee due.

#### Response to Final Rejection

Applicants will now address each of the Examiner's objections and rejections in the order in which they appear in the Final Rejection. If Amendment B has not yet been entered, Applicants request that it now be entered.

## **I. Drawings**

The Examiner approved of the prior correction to the drawings. In the Final Rejection, the Examiner is requiring corrected drawings. Applicants filed in Amendment B corrected formal drawings which should overcome all of the Examiner's objections to the drawings. The only changes made to the drawings, other than formalizing them, is to correct a couple of spelling errors in Fig. 21A as shown on the marked-up copy in Amendment B. Hence, it is believed that no new matter is being added. Accordingly, Applicants respectfully request that this objection be withdrawn.

## **II. Claim Rejections - 35 USC §103**

In the Final Rejection, the Examiner has the following rejections under 35 USC §103:

- a. Claims 1 and 25 as being unpatentable over Matsumoto in view of Adan et al. and Shimone;
- b. Claims 3 and 27 as being unpatentable over Matsumoto in view of Adan et al., Shimone and Karauchi et al.; and
- c. Claims 21 and 23 as being unpatentable over Matsumoto in view of Adan et al., Shimone, and Karauchi et al. and further in view of Hioki; and in addition,
- d. Claim 53 as being unpatentable over Matsumoto in view of Adan, Shimone, Karauchi and Takasu.

Each of these rejections is respectfully traversed.

The present invention, as recited in the amended independent claims, is directed to a semiconductor device comprising a pixel section having a pixel TFT over a substrate and a driver section comprising a p-channel TFT and an n-channel TFT over the substrate. The pixel TFT has at least one LDD region. The p-channel TFT of the driver circuit does not have a LDD region. The

n-channel TFT of the driver circuit has at least one LDD region which partly overlaps a gate electrode of the pixel TFT.

Applicants respectfully submit that none of the cited references disclose or suggest such a structure.

More specifically, Matsumoto appears to disclose that each of the pixel TFT, the p-channel TFT and the n-channel TFT have a pair of LDD regions. Hence, Matsumoto does not disclose or suggest the claimed feature that a p-channel TFT of the driver circuit does not have a LDD region.

As Applicants do not believe that any of the other references disclose or suggest such a feature or structure, the independent claims, and those claims dependent thereon, are patentable over the cited references. Accordingly, it is respectfully requested that the rejections of the claims be withdrawn, and the claims allowed.

#### Conclusion

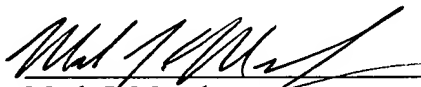
It is respectfully submitted that the present application is now in a condition for allowance and should be allowed.

Please charge our deposit account 50/1039 for any further fee for this amendment.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

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Marked-up copy of the amendments made herein:

**IN THE CLAIMS:**

Please amend the claims as follows:

1. (Amended) A semiconductor device comprising:

a pixel TFT disposed in a pixel section over a substrate; and

a driver circuit comprising a p-channel TFT and an n-channel TFT, over [a] the substrate[,]

a first interlayer insulating film comprising an inorganic insulating material over a gate electrode of the pixel TFT;

a second interlayer insulating film comprising an organic insulating material over the first interlayer insulating film; and

a pixel electrode having a light reflective surface over the second interlayer insulating film, and electrically connected with the pixel TFT through an opening in the first and second interlayer insulating films,

wherein[:] the p-channel TFT of the driver circuit comprises a channel forming region [and a p-type impurity region of a fourth concentration that forms] a source region [or] and a drain region [and is disposed] in contact with the channel forming region[;] ,

wherein the p-channel TFT of the driver circuit does not have a LDD region,

wherein the n-channel TFT of the driver circuit comprises a channel forming region, an n-type impurity region of a first concentration which forms [a] at least one LDD region [that is disposed] in contact with the channel forming region and partly [overlaps] overlapping the [a] gate electrode, and [an n-type impurity region of a third concentration which is disposed in the outside of the n-type impurity region of the first concentration and forms] a source region [or] and a drain region in contact with the at least one LDD region[,]

wherein the pixel TFT comprises a channel forming region, [an n-type impurity region of

a second concentration which is disposed in contact with the channel forming region and forms a] at least one LDD region in contact with the channel forming region, and [an n-type impurity region of the third concentration which is disposed in the outside of the n-type impurity region of the second concentration and forms] a source region [or] and a drain region in contact with the at least one LDD region. [and]

[a pixel electrode disposed in the pixel section has a light reflective surface, the pixel electrode is formed over an interlayer insulating film comprising an organic insulating material, and is connected to the pixel TFT through an opening formed in a protective insulating film comprising an inorganic insulating material disposed over a gate electrode of the pixel TFT and in the interlayer insulating film formed in contact with the protective insulating film.]

3. (Amended) A semiconductor device [having a liquid crystal sandwiched between a pair of substrates, wherein] comprising:

a pixel TFT disposed in a pixel section over a first substrate;

[one of the substrates comprises a pixel TFT disposed in a pixel section and a p-channel TFT and an n-channel TFT of a driver circuit, wherein:]

a driver circuit comprising a p-channel TFT and an n-channel TFT over the first substrate;

a first interlayer insulating film comprising an inorganic insulating material over a gate electrode of the pixel TFT;

a second interlayer insulating film comprising an organic insulating material over the first interlayer insulating film; and

a pixel electrode having a light reflective surface over the second interlayer insulating film, and electrically connected with the pixel TFT through an opening in the first and second interlayer insulating films,

at least one columnar spacer covering the opening;

a second substrate having a transparent conductive film stuck to the first substrate through  
the at least one columnar spacer; and

a liquid crystal sandwiched between the first and second substrates,

wherein the p-channel TFT of the driver circuit comprises a channel forming region [and a p-type impurity region of a fourth concentration that forms] a source region [or] and a drain region [and is disposed] in contact with the channel forming region[;] ,

wherein the p-channel TFT of the driver circuit does not have a LDD region,

wherein the n-channel TFT of the driver circuit comprises a channel forming region, an n-type impurity region of a first concentration which forms [a] at least one LDD region [that is disposed] in contact with the channel forming region and partly [overlaps] overlapping a gate electrode, and [an n-type impurity region of a third concentration which is disposed in the outside of the n-type impurity region of the first concentration and forms] a source region [or] and a drain region in contact with the at least one LDD region[;]

wherein the pixel TFT comprises a channel forming region, [an n-type impurity region of a second concentration which is disposed in contact with the channel forming region and forms a] at least one LDD region in contact with the channel forming region, and [an n-type impurity region of the third concentration which is disposed in the outside of the n-type impurity region of the second concentration and forms] a source region [or] and a drain region in contact with the at least one LDD region.

[a pixel electrode disposed in the pixel section has a light reflective surface, the pixel electrode is formed over an interlayer insulating film comprising an organic insulating material and is connected to the pixel TFT through an opening formed in a protective insulating film comprising an inorganic insulating material disposed over a gate electrode of the pixel TFT and in the interlayer

insulating film formed in contact with the protective insulating film; and]

[said one of the substrate is stuck to the other substrate on which a transparent conductive film is formed, through at least a columnar spacer formed on superposition of the opening.]

21. A semiconductor device according to claim 3 wherein the columnar spacer is formed over the p-channel TFT and the n-channel TFT of the driver circuit.

23. A semiconductor device according to claim 3 wherein the columnar spacer is formed to cover at least a source wiring or a drain wiring of the p-channel TFT and the n-channel TFT of the driver circuit.

25. A semiconductor device according to claim 1 wherein the semiconductor device is in an apparatus selected from a group consisting of a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disc player, an electronic game machine and a projector.

27. A semiconductor device according to claim 3 wherein the semiconductor device is in an apparatus selected from a group consisting of a personal computer, a video camera, a portable information terminal, a digital camera, a digital video disc player, an electronic game machine and a projector.

53. (Amended) A semiconductor device comprising:

a pixel TFT having disposed in a pixel section over a substrate;

a driver circuit comprising a p-channel TFT and an n-channel TFT over the substrate,

a first interlayer insulating film comprising an inorganic insulating material formed over the pixel section;

a second interlayer insulating film comprising an organic insulating material over the first interlayer insulating film;

a pixel electrode having a light reflective surface over the second interlayer insulating film, and in connected to the pixel TFT through an opening formed in the first and second interlayer insulating films;

a source wiring over the second interlayer insulating film;

an alignment film formed over the pixel electrode and the source wiring; and

a liquid crystal interposed between the alignment film and an opposed substrate,

wherein[:] the p-channel TFT of the driver circuit comprises a channel forming region [and a p-type impurity region of a fourth concentration that forms] a source region [or] and a drain region [and is disposed] in contact with the channel forming region[;] ,

wherein the p-channel TFT of the driver circuit does not have a LDD region,

wherein the n-channel TFT of the driver circuit comprises a channel forming region, [an n-type impurity region of a first concentration which forms [a] at least one LDD region [that is disposed] in contact with the channel forming region and partly [overlaps] overlapping a gate electrode, and [an n-type impurity region of a third concentration which is disposed in the outside of the n-type impurity region of the first concentration and forms] a source region [or] and a drain region in contact with the at least one LDD region,[;]

wherein the pixel TFT comprises a channel forming region, [an n-type impurity region of a second concentration which is disposed in contact with the channel forming region and forms a] at least one LDD region in contact with the channel forming region, and [an n-type impurity region of the third concentration which is disposed in the outside of the n-type impurity region of the



second concentration and forms] a source region [or] and a drain region in contact with the at-least  
one LDD region,

wherein the pixel electrode and the source wiring are formed, simultaneously.